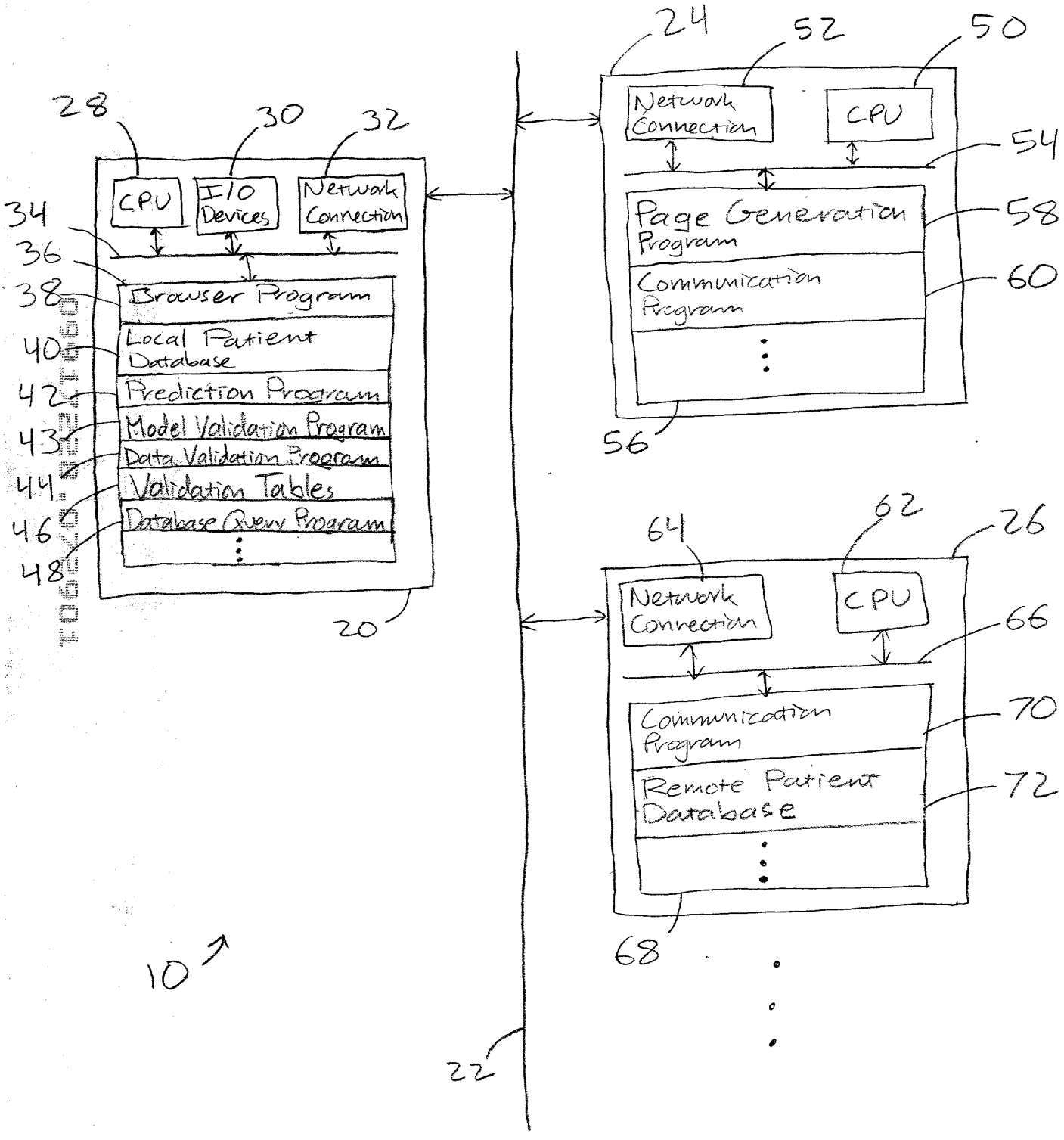
24
52
50
Network Connection
CPU
54
Page Generation Program
58
Communication Program
60
56
28
30
32
CPU
I/O Devices
Network Connection
34
36
38
Browser Program
40
Local Patient Database
42
Prediction Program
43
Model Validation Program
Data Validation Program
44
Validation Tables
46
Database Query Program
48
20
64
62
26
Network Connection
CPU
66
Communication Program
70
Remote Patient Database
72
68
10
22

Fig. 1

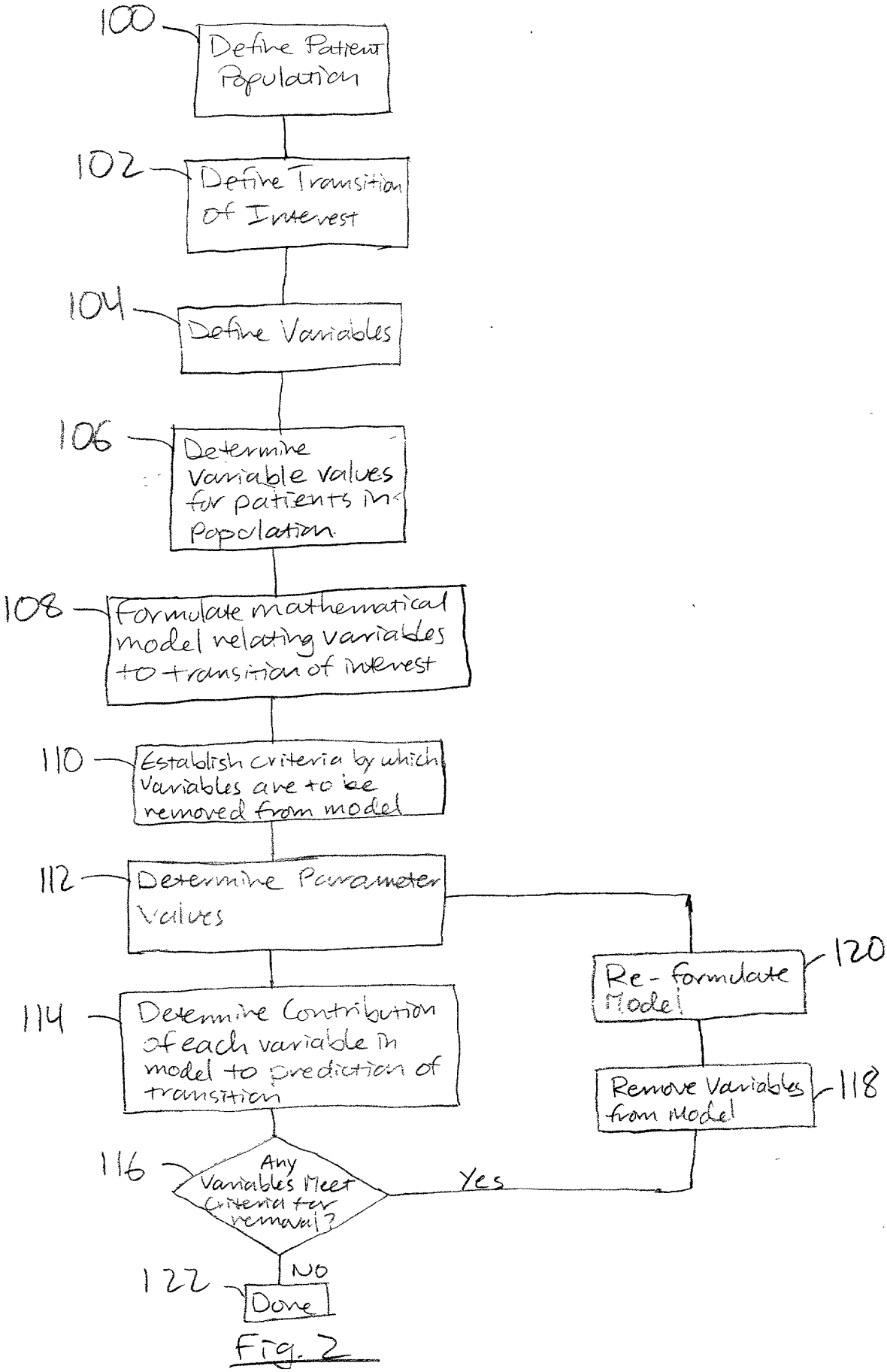
100
Define Patient Population
102
Define Transition Of Interest
104
Define Variables
106
Determine Variable values for patients in Population
108
Formulate mathematical model relating variables to transition of interest
110
Establish criteria by which Variables are to be removed from model
112
Determine Parameter Values
114
Determine Contribution of each variable in model to prediction of transition
116
Any Variables Meet Criteria for removal?
Yes
No
120
Re-formulate Model
118
Remove Variables from Model
122
Done

Fig. 2

Variable	Variable Name*	Variable Categorization
High Cost in Index Year	HC	1: High Cost 0: Not High Cost
Total Cholesterol	TC_1, TC_2 TC_3	0: < 240 and compliant 1: Non-compliant 2: ≥ 240 and compliant
LDL Cholesterol	LC_1, LC_2, LC_3	0: < 160 and compliant 1 Non-compliant 2: ≥ 160 and compliant
Creatinine	CR_1, CR_2, CR_3	0 < 48.3 and compliant 1 Non-compliant 2: ≥ 48.3 and compliant
Microalbumin	MA_1, MA_2, MA_3	0: < 30 and compliant 1: Non-compliant 2: ≥ 30 and < 300 and compliant 3: ≥ 300 and compliant
Hemoglobin A1C	HB_1, HB_2, HB_3	0: < 7.5 and compliant 1: Non-compliant 2: ≥ 7.5 and Compliant
PCP Compliance	PCP_1, PCP_2, PCP_3	0: Compliant 1: Non-compliant
Ophthalmology Compliance	OP_1, OP_2, OP_3	0: Compliant 1: Non-compliant
Gender	GEN	0: Male 1: Female
Age	AGE	0: < 45 1: ≥ 45 and < 65 2: ≥ 65
Number of Severe Inpatient Diagnoses	NS	0: 0 diagnoses 1: 1 or 2 diagnoses 2: > 2 diagnoses
Cost in TP_3	CS	NA (continuous)

Fig. 3

Patient Number	1	2	3	4	5	6	7	8	9	10
HC	0	1	1	0	0	0	0	0	0	0
TC_1	0	1	1	1	1	0	0	1	0	1
TC_2	0	0	0	0	1	0	0	0	0	0
TC_3	0	1	1	0	1	2	0	0	0	0
LC_1	0	1	1	1	1	0	0	1	0	1
LC_2	0	0	0	0	1	2	0	0	0	0
LC_3	0	1	1	0	1	2	0	0	0	0
CR_1	1	1	1	1	1	1	1	1	1	1
CR_2	1	1	1	1	0	1	1	1	1	1
CR_3	0	1	1	2	1	1	1	0	1	1
MA_1	0	1	1	1	1	1	1	1	1	1
MA_2	1	2	3	0	1	1	1	1	1	0
MA_3	0	2	1	0	1	2	1	2	2	0
PCP_1	1	1	1	1	0	1	1	1	0	1
HB_1	0	1	1	1	1	2	2	1	2	2
HB_2	0	0	2	2	1	1	2	0	2	2
HB_3	0	1	2	2	1	2	2	0	2	0
PCP_2	1	1	1	1	0	1	1	1	0	1
PCP_3	1	1	1	1	0	1	1	1	1	1
OP_1	0	0	0	0	0	0	0	1	1	0
OP_2	0	1	1	0	0	0	1	1	0	1
OP_3	0	1	0	0	0	0	0	0	1	1
GEN	1	0	0	0	0	0	0	0	0	1
AGE	1	2	1	1	1	1	1	1	2	2
NS	0	1	0	0	0	0	0	0	0	0
CS	$974	$4613	$377	$1011	$773	$436	$1163	$475	$1687	$3068
Index Year Cost	$429	$28181	$10468	$85	$964	$7145	$8534	$158	$9583	$4629
Risk Score for High Cost in TP_4	1	100	61	3	<1	21	31	1	1	49

Fig. 4

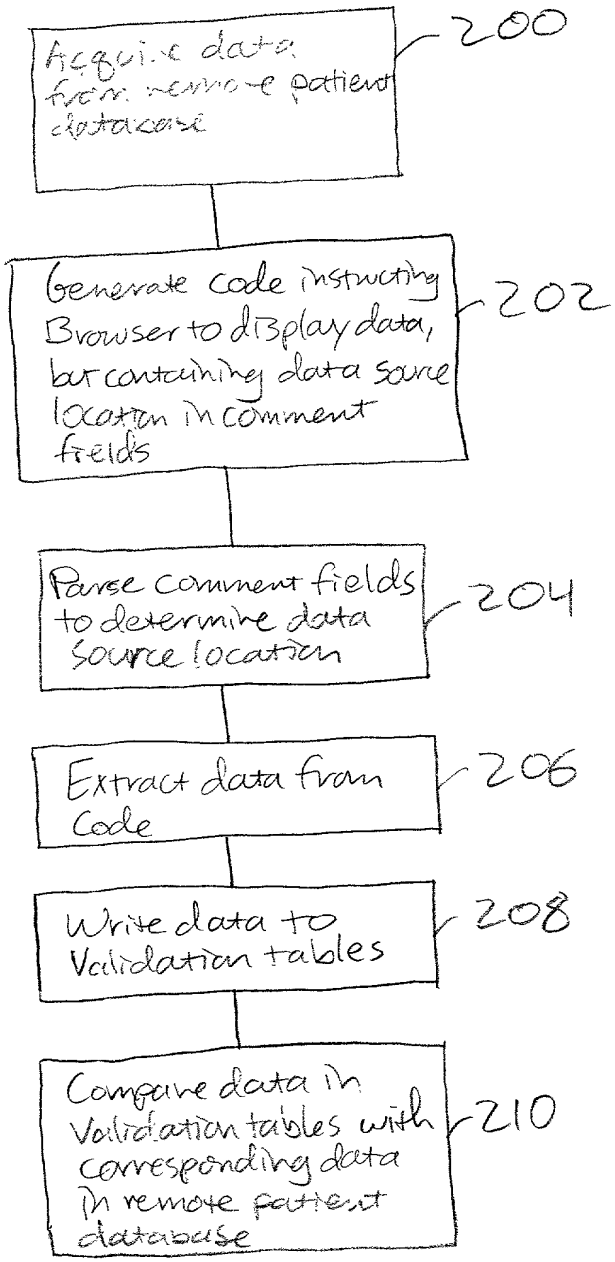
Acquire data from remote patient database
200
Generate code instructing Browser to display data, but containing data source location in comment fields
202
Parse comment fields to determine data source location
204
Extract data from code
206
Write data to Validation tables
208
Compare data in Validation tables with corresponding data in remote patient database
210

Fig. 5

Listing 1: Example of the use of invisible identifier tags in HTML code

```
Patient:
<FirstName on Table A>John</FirstName on Table A>
<LastName on Table A>Doe</LastName on Table A>
<br>
Phone Number:
<PhoneNumber on Table A>(888) 888-8888</PhoneNumber on Table A>
```

Fig. 6A

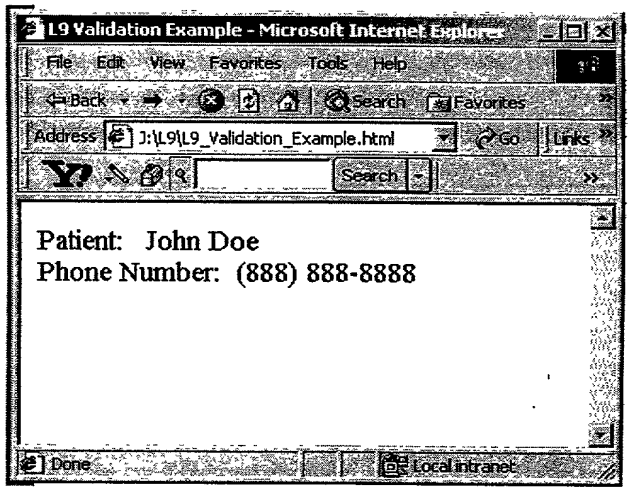

Fig. 6B

Non-compliant Patient Parameters:

Enrollment

TRICARE Prime

Primary Care Physician

All

MTF

All

Assigned to Care Manager

All

Clinic

All

☐ **Age** ☐ **Risk Index** ☐ **HbA1c Value**

Order By: ◉ Alphabetically ○ By Risk Index

Generate List

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NOTE: This is a demo program. The clinical data displayed herein is not associated with any real persons.

Fig. 7

Save List **Non Compliant Patients**

ALL | Creatinine | HbA1c

A | B | C | D | E | F | G | H

AADLAND,ERIC A	30
ABA,JOYCE K	60
ABBOTT,RALPH R JR	48
ABELL,DAVID	42
ABELL,DONALD	60
ABELL,JAMES C	30
ABELL,ROLAND J	36
ACEVEDO,DORIS L	36
ACEVEDO MELISSA M	36

NEXT 100

Non-Compliant Patients: **7119**
Compliant Patients: **424**
Total: **7543**

Fig. 8A

Save List **Non Compliant Patients**

ALL | Creatinine | HbA1c

100 - 91 | 90 - 81 | 80 - 71

HILL,VIKKI K	99
PAULSEN,LAMONT	99
RYALS,PHILLIP E	99
ESTES,CARRIE L	96
HAYWOOD,BETTY J	96
IRWIN,LESTER E.	96
MARCUM,ROGER N	96
MCKINNEY,WILLIAM A JR	96
MILLS CHARLES E	96

Non-Compliant Patients: **7119**
Compliant Patients: **424**
Total: **7543**

Fig. 8B

Enrollment:TRICARE Prime **MTF:**ALL **Case Manager:**ALL
Clinic:ALL
Provider:ALL

Outreach: Phone Call Email / Letter

Protocol Lab History | Diagnoses | Assignments | Outreach History | Diabetic? | Contact

Overdue Protocol(s):

- LDL Cholesterol: Due **7/24/2000** : due every 6 months.
- Ophthalmology: Due **12/15/1996** : due every 12 months.
- HbA1c: Due **7/25/2000** : due every 6 months.

Patient Name:	**ALVARADO,SAUL R**
Diabetes:	**Not Confirmed**
Telephone:	555-555-1212
Address:	x xxxx xxxx
City, State. Zip:	xxx xxxx, xx 78242
FMPSSN:	xxxxxxxxx
DOB:	5/5/40
Clinic:	WHMC TRICARE HMO / BHAA
MTF:	WILFORD HALL
Enrollment:	TRICARE Prime

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Fig. 9

Enrollment:TRICARE Prime **MTF:**ALL **Case Manager:**ALL
Clinic:ALL

Patient: ALVARADO,SAUL R

(•) None	( ) No Answer
( ) Left Message	( ) Spoke with Patient

Contact Notes

Record Contact | Close

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Fig. 10